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ABSTRACT

In 1984-85, the New York City Public Schools received $2,374,686 from the state legislature to operate the School Community Education Program (also known as the Umbrella Program). The program consisted of 46 different projects designed to provide innovative solutions to local educational and school problems. Thirteen of these projects are evaluated in this report; the projects focus on social, ethnic, or environmental studies or offer instruction in communications or the arts. Each evaluation report describes the project briefly, identifies the evaluation methodology, presents the findings, and provides recommendations for improvement. Copies of program-developed assessment instruments are provided when appropriate. The projects evaluated in this volume are: (1) Improving Attitude through the Arts (arts, grades 1-6); (2) the Media Integrated Communication Arts Program (multimedia communication arts, grade 4); (3) Project Education and Camping Opportunity through Learning Environment (E.C.O.L.E.) (environmental science training, elementary school teachers); (4) the Urban Environmental Program (environmental studies, elementary level); (5) the Across Four Bridges Project (New York harbor history, grades 3-7); (6) Wave Hill Urban Environmental Program (urban environmental science training, elementary and junior high school teachers); (7) the Refocusing Attitudinal Perspectives (RAP) Program (ethnic studies training, secondary school students and teachers); (8) the Basic Skills After-School Program (social studies enrichment, grade 6); (9) the Goddard-Riverside Environmental Education Program (environmental science, grades 4-6); (10) the Ethnic Awareness Program (ethnic studies, grades 2-9); (11) Project KEEP: the Knowledge of the Environment and Ecology Preserves Us Project (environmental studies, elementary); (12) the Lenox Hill Environmental Education Program (environmental studies, elementary); and (13) the Adventures in Science Project (marine environmental studies, elementary school students and teachers). (PGD)

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SCHOOL COMMUNITY EDUCATION PROGRAM

IN NEW YORK CITY
1984-85

VOLUME III

OEA Evaluation Report

EA 019 130

FINAL EVALUATION REPORT

Robert Tobias, Administrator
John Schoener, Senior Manager

December, 1986

SCHOOL COMMUNITY EDUCATION PROGRAM

IN NEW YORK CITY
1984-85

VOLUME III

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INTRODUCTION

In 1984-85, the New York City Public Schools received $2,374,686 in funding from the New York State Legislature to operate the School Community Education Program (also known as the Umbrella Program). It consisted of 46 different projects designed to provide innovative solutions to local educational and school problems.

The program provided services to about 12,940 participants in the 32 Community School Districts. The majority of these participants (11,613) were elementary and high school pupils. In addition, 238 pre-school children, 929 teachers and supervisors, and 160 community adults took part in the Umbrella Program.

Evaluation reports are presented in four volumes. Volume I contains evaluations for 13 projects which provided reading, mathematics, writing and English instruction. Volume II includes evaluations for three computer literacy projects and four pre-kindergarten programs. Volume III contains evaluations for 13 projects on social, ethnic and environmental studies and instruction on communications and the arts. The remaining 13 projects, presented in volume IV, provided a variety of educational experiences to students, teachers and supervisors. Seven of these projects were designed for staff development training, two offered career orientation counseling, one provided parenting skills instruction to students with children and the other three projects sought to improve attendance, memory and health among participants.

Each report contains a brief project description, describes the evaluation methodology, presents the findings, provides recommendations for improvement and includes copies of program-developed assessment instruments. The reports are listed in order of budgeted function number in the Table of Contents.

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#5001-48-53402

POLO GROUNDS VALLEY, INC.-IMPROVING ATTITUDE THROUGH THE ARTS, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Michael Carlin

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROGRAM DESCRIPTION

The Improving Attitude Through the Arts program is an after-school project designed to expose students to a wide variety of art forms. Its goal is to enrich and renew student interest in the daily classroom experience by improving their self-esteem while, subsequently, generating an increase in student daily school attendance. The program is offered to first- through sixth-grade students at P.S. 46, District 5, who have demonstrated poor attendance and achievement records in the past. The project used facilities at the Polo Grounds Community Center, where program activities were scheduled three hours a day, five days a week for 36 weeks.

In 1984-85, 50 elementary school students from P.S. 46 participated in after-school, "hands-on" art activities at the Polo Grounds Community Center. A project teacher was assigned to work with students in small groups using the "Open Art Laboratory Technique" which provides "hands-on" experience in the arts. Instructional support staff included four paraprofessionals and

three student teachers. The New York State Legislature provided funding of $21 thousand for the project.

EVALUATION METHODOLOGY

Evaluation activities focused on analysis of student responses to a program-developed school attitude survey. This instrument lists 20 activities followed by three drawings of a face. Each face carries an expression, either a smile, a scowl, or a neutral expression which is characterized by a horizontal line for its mouth (see Appendix A.) Students were instructed to color the happy face if they liked the stated activity; color the unhappy face if they didn't like it; or color the neutral face if they felt "O.K." about the activity. Responses were assigned numerical values for scoring purposes. A "Like" response was given a two; "O.K." responses a one; and "Don't Like' responses a zero. This survey was administered as both a pre- and posttest. The program objective anticipated that 75 percent of the students, who had regularly attended program sessions, would show improvement in their attitude towards school activities by achieving a score of at least 75 percent on the posttest.

FINDINGS

Pre- and posttest scores were submitted for all 50 participants (see Table 1). For every grade level, posttest scores showed great improvement. An average 64 percent more students scored 75 percent in attitudinal ratings of school activities on

TABLE 1

Percentage of Students Achieving
A Score of at least 75 Percent
on a Program-Developed Survey, by Grade
Polo Grounds Valley - Improving Attitude through the Arts, 1984-85

Grade	Total No. Students	Percentage of Students Scoring 75% on Survey		
		Pretest	Posttest	% Gain
1	9	33%	100	67%
2	10	40	100	60
3	10	40	100	60
4	9	0	89	89
5	7	14	43	29
6	5	20	100	80
TOTAL	50	26	90	64

[a] A perfect raw score was 40, therefore, students obtaining 30 or more correct responses achieved 75 percent.

- Students at all grade levels achieved posttest gains indicating a more positive response to survey questions following program participation.

the posttest. The greatest improvement was shown by fourth-graders wherein 89 percent of the students scored higher on the posttest than on the pretest. The gain was lowest in the fifth grade with only a 29 percent student attitude increase. Posttest scores show that 90 percent of participating students achieved a score of at least 75 percent in their attitude towards schooling, surpassing the program's anticipated objective.

CONCLUSION AND RECOMMENDATIONS

The Improving Attitude Through the Arts program was successful in meeting its stated objectives. Student attitude towards school and arts-related activities increased, as expected, by the end of the project. This increase was demonstrated by all grades, fifth-graders achieved the lowest increase. However, it is not possible to determine whether student self-image was enhanced by program participation since survey items do not address that issue. The attitudinal survey could be revised to include items about how students feel about "My performance in school" or "My academic progress" to measure student self-esteem.

In addition, to determine whether an improvement in participants' self-esteem increases their daily school attendance, project staff could consider including student attendance rates in the program objective. For example, 75 percent of the students will show an improvement in their attitude towards school by achieving a score of at least 75 percent on the

posttest, and their attendance in school will improve significantly.

APPENDIX A

53402

POLO GROUNDS VALLEY INC.
AFTER SCHOOL CENTER
IMPROVING ATTITUDES THROUGH THE ARTS

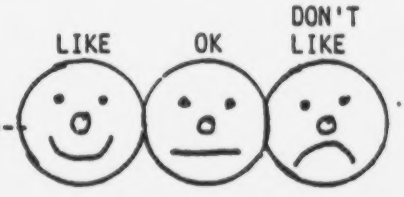
SURVEY

NAME_____ GRADE_____

SCHOOL_____ DATE_____

DIRECTIONS: With a pencil color in the face that shows how you feel about the activities described below:

SAMPLE QUESTION:



Eating ice cream----------

1) Learning about other people and countries in school------1

2) Going to a play---------- 2

3) My teacher at school----------3

4) Acting in a play----------4

5) Visiting the library in school----------5

6) Dance activities----------6

7) Attending school----------7

8) My classmates at the center----------8

9) Doing math at school----------9

10) Painting pictures----------10

11) My classmates in school_____11

12) Listening to stories----------12

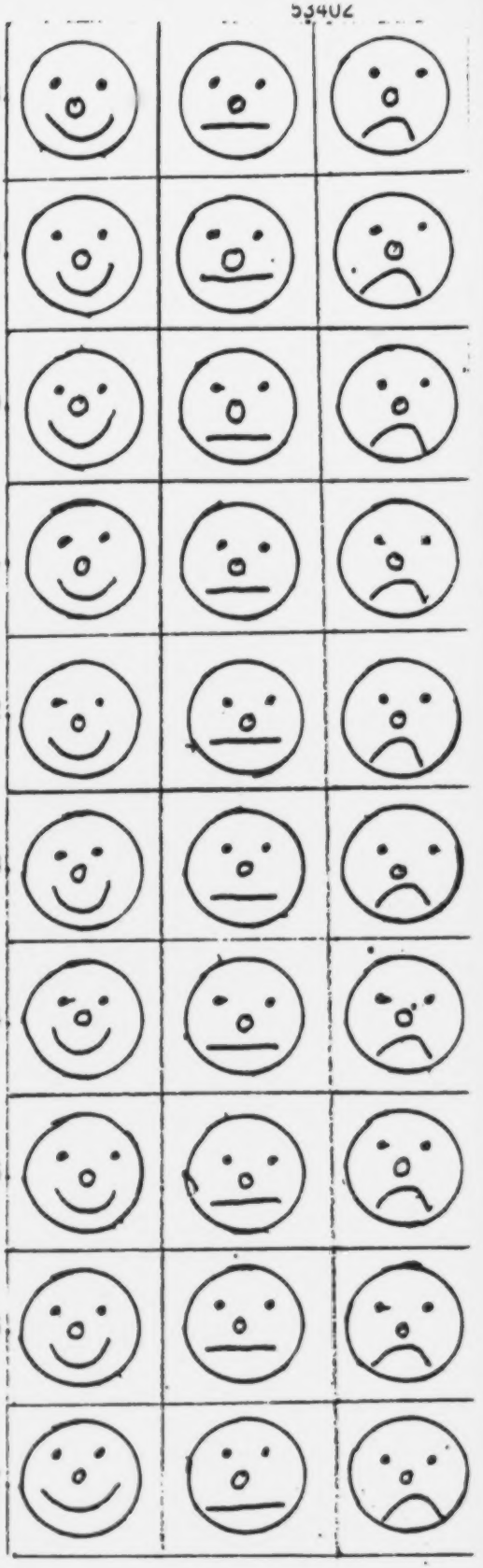
13) Things we talk about in school----------13

14) Singing with other people----------14

15) Books----------15

16) My teachers at the center----------16

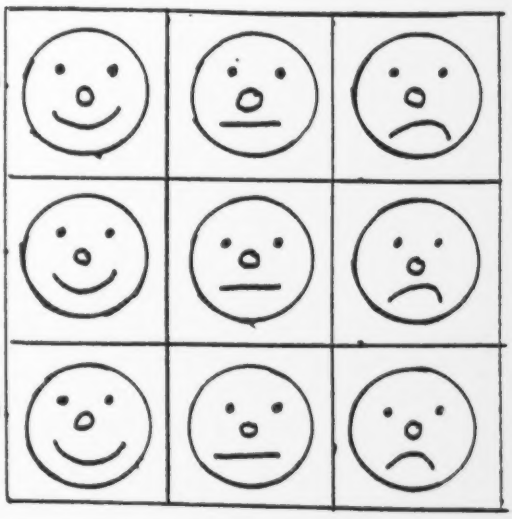
17) Reading a story----------17



18) Taking trips to museums----------18.

19) Having special events at the center----------19.

20) Writing a story----------20.



#5001-48-53405

MEDIA INTEGRATED COMMUNICATION ARTS (MICA) PROGRAM, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Janet Naftol

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Media Integrated Communication Arts (MICA) Program is a multi-media communication arts program for fourth-grade pupils and their teachers in District 26, Queens. The goals of the program are: 1) to promote students' reading and study skills through participation in creative multi-media activities; and 2) to train teachers in the use of media in communication arts instruction.

In 1984-85, 455 pupils from 13 elementary schools participated in the program. Schools were selected by the district on the basis of need for such services. Classes visited the MICA Center in PS 178 with their teachers one full morning a week for ten weeks; three successive ten-week sessions were held. The pupils received instruction in media such as filmstrips, puppetry, slide presentations, and computer literacy, and worked on projects that they later continued under the supervision of their classroom teachers.

The objective for 1984-85 was for pupils attending 70 percent of the scheduled sessions to show improvement in study

skills as measured by their performance on a program-developed test. The project was staffed by one media specialist who conducted activities and maintained a media library. The project received $23 thousand in funding from the New York State Legislature.

EVALUATION METHODOLOGY

Project impact was assessed by an analysis of students' scores on a program-developed test designed to measure knowledge of study skills, library research methods, and media terms. (See Appendix A). The test was administered as a pre- and posttest at the beginning and end of each ten-week session.

FINDINGS

Pre- and posttest scores on the project-developed test were reported for 342 students (Table 1). The mean pretest score was 12 out of a possible 21 (57 percent correct) and the mean posttest score was 15 (71 percent correct). Thus, pupils gained an average of three items correct or 14 percent at posttest.

CONCLUSIONS AND RECOMMENDATIONS

Although the findings show that students achieved the objective set by the project, this goal was phrased in terms that were too general to record actual program impact. Further, as noted in previous evaluations, pretest scores show that pupils know over half the items on the test before participation in the project. Although the evaluations of the two previous years

TABLE 1

Student's Mean Raw Scores Gains on the Media Integrated Communications Arts (MICA) Program-Developed Test, by School 1984-85

		Mean Raw Scores[a]					
		Pretest		Posttest		Gain	
School	N	Mean Raw Score	% of Score	Mean Raw Score	% of Score	Mean Raw Gain	% Score
PS 96	24	14	66%	16	76%	2	9%
98	30	12	57	15	71	3	14
173	29	12	57	15	71	3	14
188	25	12	57	15	71	3	14
26	30	14	66	16	76	2	9
31	25	11	52	14	66	3	14
115	27	12	57	15	71	3	14
191	28	11	52	15	71	4	14
159	30	12	57	14	66	2	9
162	24	11	52	14	66	3	14
186	22	13	61	16	76	3	14
205	22	13	61	16	76	3	14
178	26	13	61	15	71	2	9
TOTAL	342	12	57%	15	71%	3	14%

[a] Total possible raw score = 21.

- Students from all participating schools achieved posttest mean gains ranging from nine to 14 percent.

recommended revision of the evaluation instrument to reflect more closely project activities, the same instrument continues to be used. Project staff should assess more closely the actual instructional needs of pupils entering the program, design a test that reflects the material covered by the program, and set quantifiable criteria for project success. (For example, 70 percent of the pupils will gain 50 percent from pretest to posttest).

#05

NAME_____ SCHOOL 53405

DATE_____

MEDIA-INTEGRATED
COMMUNICATION ARTS PROGRAM
(MICA)

Pretest - Posttest

These are multiple choice questions. Choose the correct answer to complete the sentence. Write the letter in front of it on the line to the left of the question.

_____1. The local news tells us about events in
- A. Israel
- B. New York City
- C. California

_____2. The index of a book is found in the
- A. front
- B. back
- C. middle

of the book.

_____3. A book that tells us most about the life of a famous person is called
- A. an encyclopedia
- B. an atlas
- C. a biography

_____4. In order for the Pet Computer to send a command to memory, you must press
- A. Space bar
- B. Return
- C. Run

_____5. To communicate means to
- A. travel to work
- B. tell someone something
- C. to eat all your food

_____6. National News on NBC Channel 4, gives you information about

A. China's people

B. Brooklyn, New York

C. The United States

_____7. If you want to know in what chapter of your social studies book you can find information about Spanish explorers, look in

A. index

B. table of Contents

C. title Page

_____8. Some print-media we use to communicate with are

A. T.V.

B. books and magazines

C. radios

_____9. A picture in a book is called

A. an index

B. a glossary

C. an illustration

_____10. To project pictures of a transparency, use

A. an overhead projector

B. a filmstrip projector

C. an opaque projector

_____11. The index in your book is arranged

A. by chapters

B. alphabetically

C. by topic

_____12. If you want information about Benjamin Franklin, look in
- A. an atlas
- B. a dictionary
- C. an encyclopedia

_____13. To make a filmstrip or transparency presentation, you should use a
- A. storyboard
- B. graph paper
- C. colored paper

to help you plan your work.

_____14. If you want to find books about George Washington in the card catalog, which drawer whould you go to?
- A. F-G
- B. W
- C. P

_____15. To project a picture found in a book so the entire class can see it, you must use
- A. overhead projector
- B. filmstrip projector
- C. opaque projector

_____16. To tape your report on the cassette recorder/player, you must press
- A. play
- B. record and play
- C. record

_____17. Another word for advertisements is
- A. commercials
- B. consumers
- C. cooperatives

_____18. Folktales are

A. funny stories written last year

B. stories handed down to us by storytellers

C. stories written by Maurice Sendak

_____19. Five media we use for communication in the home are

_____ _____

_____ _____

_____

_____20. Name five library sources you could use to prepare a report about the explorers,

_____

_____

_____

_____

_____

_____21. When taking notes for a report you should

A. copy the words exactly from the book

B. copy the key words and facts

C. memorize the facts as you read them

#5001-48-53408

E.C.O.L.E. - EDUCATION AND CAMPING OPPORTUNITY THROUGH LEARNING ENVIRONMENT, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Richard Einbinder

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

Project Education and Camping Opportunity Through Learning Environment (E.C.O.L.E.) is a training program in environmental science for elementary school teachers in Community School District (C.S.D.) 19. The project uses the facilities and staff of the William H. Pouch Environmental Center and the Nature's Niche science facility in C.S.D. 19 to provide instruction in environmental science and staff development in teaching science. Teachers and their pupils, in grades four through six, take part in the program's activities.

In 1984-85, 36 teachers and approximately 840 pupils participated in Project E.C.O.L.E. Teachers from six elementary schools in C.S.D. 19 were selected by their principals on the basis of their need for assistance in science instruction. Teachers and pupils traveled to Camp Pouch every six weeks a total of five times. Camp staff provided instruction in areas such as map reading, first aid, pollution, soil conservation, the life cycle of plants, basic astronomy, and environmental

protection. Teachers were assisted in developing instructional units in science that incorporated work in other curriculum areas such as mathematics and social studies. District science staff developers provided follow-up training in the teachers' classrooms and at the Nature's Niche facility. In addition, six of the teachers also participated in an overnight camping trip.

The objective for 1984-85 was for teachers to improve their ability to design and implement lessons in environmental science. Specifically, 70 percent of the participants were to show improvement in these skills as measured by their pre- and posttest scores on a program-developed test.

Project E.C.O.L.E. was staffed by a program coordinator, science staff developers, and a school aide paid by C.S.D. 19. Camp Pouch also provided instruction at no cost to the project. Funding of $25 thousand from the New York State Legislature was used to cover the cost of transportation to Camp Pouch and the purchase of instructional supplies.

EVALUATION METHODOLOGY

Project impact was assessed by an analysis of teachers' scores on a program-developed test (see Appendix A). The test combined multiple-choice, short essay, fill-in, true or false, and matching questions to assess knowledge of science concepts. It was given on a pre- and posttest basis at the beginning and end of the program. The maximum raw score was 50.

FINDINGS

Pre- and posttest scores were reported for 36 teachers (See Table 1). The mean pretest score was 20 (40 percent correct) and the mean posttest score was 30 (60 percent correct), for a mean gain of ten points or 20 percent. All of the teachers improved their performance at posttest, and thus the project achieved its objective.

CONCLUSIONS AND RECOMMENDATIONS

Although the project achieved its aim of improving teachers' performance on the project-developed test of science knowledge, the mean gain of 20 percent from pretest to posttest does not indicate a significant impact. In addition, only four of the 36 teachers achieved a posttest score of 75 percent or more correct, indicating that the test is too difficult or does not reflect program activities. Project administration should review the test in light of these findings. An instrument composed of 50 multiple-choice items may be preferable. It is also recommended that future performance objectives include a specific quantifiable measure of improvement from pretest to posttest.

TABLE 1

[a]
Teacher Mean Scores on a Program-Developed Test
E.C.O.L.E. - Education and Camping
Opportunity Through Learning Environment, 1984-85

	N	Mean Raw Scores	%	Mean Gain	%
Pretest	36	20	40%	10	20%
Posttest	36	30	60%		

[a] Perfect Raw Score = 50

- Participants achieved a mean gain of ten points or 20 percent.

E.C.O.L.E. - EDUCATION AND CAMPING OPPORTUNITY THROUGH
LEARNING ENVIRONMENT, 1984-85

Multiple Choice

1. If a person has been poisoned and is unconscious or in convulsion, do the following:

   A.give one glass of milk B. give one glass of water C. give nothing but have person lie on his side D. make person sit up.

2. The following is a symptom of frostbite: A.Skin turns red B. Skin gets blisters C. Skin starts to sweat D. Skin changes to white or greyish yellow.

3. The following describes a third degree burn: A. not a deep burn, only surface B. goes all the way through the skin C. small blisters D. some swelling.

4. Which one is not a sign of heat stroke: A. red or flushed skin B. dizziness, nausea C. headache, rapid pulse D. fingernails turn blue.

5. Which is not to be done if a person suffers from frostbites: A. A. bring person indoors, B. give coffee or tea to drink C. warm the affected area in warm water D. keep person warm and get medical care.

Short Essay

1. Draw the Taxonomy Chart showing the proper placement for a rabbit.

2. Briefly explain what is an island.

3. Why should we use the term managed rather than man-made? What does it mean?

4. Pollution may result in the loss of one link in a particular food chain. Give an example, and an activity for children to show that example.

5. Evaporation, condensation, and precipitation are all parts of the water cycle, Briefly explain and show a diagram.

Fill In Questions

1. A map showing the difference elevations of the shown land masses is called a _____ Map.

2. The three major forces of erosion are; mechanical, chemical and _____.

3. Two major methods of maintaining fertile farm lands are terracing and _____.

4. The five layers of forest growth are called; _____, Understory, _____, _____, and the forest floor.

5. The relationship of "Centigrade" to "Farenheit" can best be explained by the formula _____.

True or False

1. A vertebrate animal is an animal with a backbone.
2. An Amphibian is an animal that lives both in water and on land._____
3. Mammals have internal gestation._____.
4. Birds with short and rounded wings are the best fliers.
5. Spiders have 3 body parts and are insects._____
6. Reptiles lay eggs or give birth to living young. _____
7. Coldblooded animals have body temperatures that do not change with the weather. _____
8. The number of young borne by a living thing is directly related to parental care. _____.
9. Insects can adapt to new environments very easily. _____.
10. Exoskeletons are part of the invertebrate body structure. _____.

Matching Questions

A	B
(1) Puffball	(A) It's fruit are Acorns
(2) Staghorn Sumac	(B) It's fruit makes good jelly.
(3) Sassafrass	(C) It's a deadly poisonous plant.
(4) Oak Tree	(D) It has clusters of 3 shiny leaves.
(5) Poison Ivy	(E) It's fruit samaras.
(6) Amanita	(F) It's leaves are shaped like mittens
(7) Beech Tree	(G) It's an edible non-green plant.
(8) Maple Tree	(H) It's buds are edible.
(9) Wildrose	(I) It's fruit contains high levels of vitamin "C"
(10) Sweetgum	(J) It's leaves have five points.

Draw a line from the numbered items in Column A to the lettered statements in Column B which best describes it.

#5001-48-53414

URBAN ENVIRONMENTAL PROGRAM FOR ELEMENTARY SCHOOL PUPILS, 1984-85

School-Community Education Program
Program Administrator
Project Coordinator: John Muir

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROGRAM DESCRIPTION

The Urban Environmental Program provided instruction on the natural and man-made environment to elementary school students in Community School Districts (C.S.D.s) 15, 17, 18, 20 and 22. Each district designated at least two schools which, in turn, selected at least four classes to participate in the program. C.S.D. 17 selected about 21 classes. Teachers and students interest in the program was the main criterion for class selection.

In 1984-85, 690 elementary school students participated in the program. Instructional activities included an orientation school visit by the project teacher, and four two-hour field trips taken at intervals between the months of October and May to Prospect Park in Brooklyn. These field trips combined nature walks and street tours of the nearby neighborhood of Park Slope with follow-up lessons taught at the park's Environmental Center. In addition, teachers offered an in-school environmental program, called Neighborhood StreetScapes. C.S.D. 17 also provided a Built Environment program focusing on urban architecture and urban history, planning and design. The New York State Legislature contributed $26 thousand to support this program.

The project objective was for students to demonstrate an increase in their awareness and appreciation for natural and man-made environments by mastering at least 80 percent of the items in a program-developed test.

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of student performance on a program-developed 20-item test (see Appendix A). The test was administered both as a pre- and a posttest. A 50 percent random sample of students' scores on all grade levels was to be submitted to the Office of Educational Assessment for evaluation.

FINDINGS

Pre- and posttest scores were submitted for only 237 students (34 percent) of the total number of participants (see Table 1). Mean pretest score was 12 (48 percent correct responses); mean posttest score was 16 (64 percent correct responses) for a mean gain of four (16 percent correct). A review of posttest scores by school shows that participants correctly answered from 53 to 70 percent responses.

CONCLUSIONS AND RECOMMENDATIONS

The evaluation findings indicate that participants were not able to achieve this year's project objective. In fact, 70 percent correct responses was the highest posttest score achieved by students in two schools. However, a review of the test and students' mean pretest score (48 percent correct responses)

TABLE 1

[a]
Students' Mean Scores on a Program-Developed Test,
Urban Environmental Program, by School and Grade, 1984-85

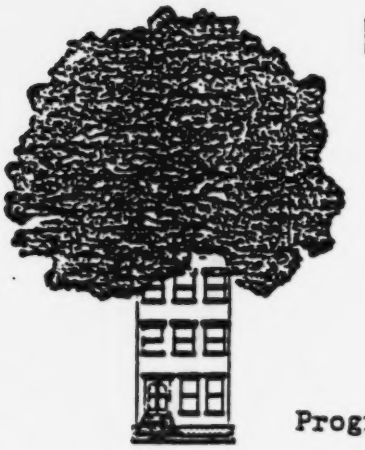
School	Grade	N	Pretest Mean Score	Pretest % Score	Posttest Mean Score	Posttest % Score	Mean Gain
PS 48	4	26	12	48%	18	70%	22%
PS 107	5	27	12	48	15	60	12
PS 154	6	27	14	57	16	64	7
PS 161	5	31	10	40	15	60	20
PS 167	4	32	10	40	13	53	13
	5	17	10	40	14	57	17
PS 235	5	24	11	44	15	60	16
PS 251	4	29	13	53	17	67	14
	5	24	15	60	18	70	10
TOTAL		237	12	48	16	64	16

[a] Perfect Raw Score = 25

- At posttest, participants mastered an average of 64 percent of the items on the project-developed test.

suggests that participants should be able to correctly answer five to ten additional questions on the posttest. In the future, project staff should ensure that test items are covered during project activities.

In spite of the fact that participants did not perform as anticipated in the project objective, a comparison of posttest to pretest scores shows that students in all schools increased their awareness and knowledge of the environment. Actually, the evaluation of the project impact could be improved if the objective established a specific quantitative gain from pre- to posttest. According to this year's outcomes, the gain could be set at 25 or 30 percent. Finally, an effort should be made to submit test data for at least 50 percent of the participants from each school rather than the 34 percent reported for this year.



Prospect Park Environmental Center

206 St. Johns Place
Brooklyn NY 11217
212-636-1900

School: _____

Class: _____

Name: _____, _____
Last First

Program Title: URBAN ENVIRONMENT PROGRAM FOR ELEMENTARY SCHOOL STUDENTS

School Year 1984-1985

PRE-TEST - POST-TEST

Ques. 1-15: CIRCLE True (T), False (F) or Uncertain (U).

T F U 1. The skin of a tree is called its bark.

T F U 2. Prospect Park is planted with only one kind of tree.

T F U 3. A landscape usually has trees, grass and soil.

T F U 4. A landscape architect usually designs buildings.

T F U 5. City parks are designed.

T F U 6. Houses and buildings are designed.

T F U 7. Food is packages of stored-up energy.

T F U 8. A design that repeats and repeats is called a pattern.

T F U 9. A twig is the part of a plant that takes in water and holds the plant in place.

T F U 10. A root is the part of the plant that has buds at the tip, and later has flowers and leaves.

T F U 11. An open-grass area in the park is called a meadow.

T F U 12. Buildings and houses should be torn down when they are old.

T F U 13. Energy moves into, through, and out of buildings.

T F U 14. Parks are the same as playgrounds.

T F U 15. Rocks and stones do not change as they get older.

#5001-48-53415

SNUG HARBOR CULTURAL CENTER - ACROSS FOUR BRIDGES PROJECT, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Grace Lamb

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROGRAM DESCRIPTION

The Across Four Bridges Project at Snug Harbor Cultural Center in Staten Island provided 375 students, in grades three through seven, with a program of instruction about New York's harbor and its maritime history. Pupils attended classes at the center one day a week for 25 weeks from December through June, traveling from schools in Community School Districts (C.S.D.s) 20, 22, and 31, in Staten Island and Brooklyn. Classes were selected by school principals, teachers, and the project director. One of these classes (grade four) consisted of 22 gifted students.

Snug Harbor Cultural Center is an 80-acre historic landmark on the waterfront with several buildings which formerly served as a retirement home for sailors. Project activities there stressed the development of reading and writing skills based on the study of such subjects as the geographic and economic history of the harbor, and career opportunities in the maritime industry.

Students were instructed by regular classroom teachers who had participated in a graduate level in-service training course

for 15 weeks prior to the start of project activities. Snug Harbor Cultural Center staff included a project director and an office aide. The New York State Legislature contributed $44 thousand to cover the cost of personnel services, the use of the center's facilities, and pupil transportation.

The program objective was for 80 percent of the students to demonstrate an increased awareness and understanding of New York's maritime history, as measured by a program-developed test.

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of student performance on a program-developed, 14-item test, designed to measure knowledge on maritime history (see Appendix A). The test was administered as both a pre- and posttest in November and May, respectively.

FINDINGS

Pre- and posttest scores were submitted for 375 students (see Table 1). Students on all grade levels achieved percentage gains from pretest to posttest ranging from 11 to 56 percent. Pretest raw scores ranged from nine to 20 points (15 overall mean raw scores or 50 percent correct responses); posttest raw scores ranged from 20 to 28 points (24 overall mean scores or 81 percent correct responses). Third graders and one fourth grade class made the lowest scores at pretest but increased the number of correct responses at posttest. Third graders achieved the highest percent gain, and at posttest they performed as well as

TABLE 1

Students' Mean Scores[a] on a Program-Developed Test, by Grade
Snug Harbor Cultural Center, 1984-85

		Pretest		Posttest		
Grade	N	Raw Score	% Correct	Raw Score	% Correct	Mean % Gain
3	46	11	37%	28	93%	56%
4	42	9	30	20	67	37
4*	22	16	53	28	93	40
4/5	27	18	60	22	73	13
5	157	14	47	23	77	30
7	65	20	67	25	83	16
TOTAL	375	15	50	24	81	31

[a] Perfect Raw Score = 30

*Gifted Students

- Students on all grade levels achieved mean gains from pre- to posttest.

the fourth-grade gifted students, both grades correctly answering 93 percent of test items.

CONCLUSIONS AND RECOMMENDATIONS

The Across Four Bridges Project was successful in meeting its objective. Students increased their knowledge about maritime history of New York's harbor, as expected, by the end of the project. However, in the future, project staff could consider setting quantifiable specific criteria for project success. For example, a sentence could be added to the program objective stating that 80 percent of the participants will achieve a gain from pre- to posttest of at least 30 percent.

APPENDIX A

ACROSS FOUR BRIDGES-SNUG HARBOR CULTURAL CENTER - NEW YORK MARITIME HISTORY PROGRAM

POST - TEST - MAY, 1985

53415

Answer as many questions as you can, but don't guess. Thank you.

Name_____ School_____ Class_____ Date_____

1. Sailors Snug Harbor was founded in 1801 by Robert Richard Randall to:
   a. _____ Train men to become sailors.
   b. _____ House the families of sailors.
   c. _____ House "aged, decrepit, and worn-out sailors".

2. New York Harbor:
   a. _____ Is often closed by ice in the winter.
   b. _____ Is a well-protected, land-locked port.
   c. _____ Is at the mouth of the Delaware River.

3. The Portuguese, in the 15th century, built a new type of ship that was able to sail along the coasts as well as across the ocean. This type of ship was called a:
   a. ____Frigate b. ____Caravel c. ____ Steamboat

4. Match the explorers to the locations they visited or discovered:

____New York Harbor	a. Christopher Columbus
____India	b. Giovanni de Verrazano
____Albany	c. Henry Hudson
____The West Indies	d. Marco Polo

5. The beaver, a symbol in the great seal of New York State, stands for:
   a. ____ the large number of streams with dams
   b. ____ the fur trade
   c. ____ man's best friend

6. Name three kinds of warships used by the colonists in the Revolutionary War:
   a. ____Frigates c. ____ Sloops e. ____ Schooners
   b. ____Viking Ships d. ____ Ocean liners

7. Which three of the following cities were more important ports than New York before the Civil War:
   a. ____ Boston b. ____ Los Angeles c. ____ Charleston
   d. ____ Philadelphia e. ____ Chicago

8. The British lost the Revolutionary War because:
   a. ____ George Washington won the Battle of New York.
   b. ____ The British ships could not be repaired because there was no timber.
   c. ____ Peter Stuyvesant surrendered.

9. Robert Fulton built a famous river steamboat called:
   a. ____ Ajax b. ____ Clermont c. ____ Independence

10. The most important difference between packet ships and other sailing ships of the day was that they could:
    a. ____ carry passengers b. ____ maintain a regularly scheduled run
    c. ____ cross the seas

11. In the 19th century John Ericsson built the first iron warship in New York called:
    a. ____ California b. ____ Monitor c. ____ Maine

12. Use the following list of words to fill in the blanks below.

    STEERAGE LARGEST IMMIGRANTS TWO WEEKS BETTER LIFE PACKET
    NEW YORK ELLIS ISLAND STEAM U.S. CUSTOMS

    The people who came to this country in the early 20th century were called _____. They came here to find a _____ _____. The first ships to cross the ocean were called _____ ships but later, faster, and better _____ ships made the journey in _____ _____. The first class passengers were examined by the _____ _____ while still on board ship, but those in _____ had to go to _____ _____. So many people came that _____ _____ became a great and busy harbor and, in time, became the _____ city in the world.

13. Life before the mast meant:
    a. ____ comfort for the officers
    b. ____ hardship for the ordinary seaman
    c. ____ pens where the animals lived on deck

14. New York played a large role in sending troops to Europe. In fact, New York was the main port from which soldiers embarked. Embarked in this sentence means:
    a. ____ left port b. ____ wooden ships c. ____ returned to port

BEST COPY AVAILABLE

#5001-48-53424

WAVE HILL URBAN ENVIRONMENTAL PROGRAM, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Talbert Spence

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Wave Hill Urban Environmental Program is a training program in urban environmental science for elementary and junior high school teachers in Community School Districts (C.S.D.'s) 9 and 10. Teachers and their pupils visit the Wave Hill Environmental Center for workshops and training in areas such as local geology, local plants, and mapping. They also participate in workshops in the field designed to help them make use of urban scientific resources. To supplement these activities, Wave Hill staff visits participating classes and assists teachers in planning lessons and in-class projects.

In 1984-85, 28 teachers, 14 each from C.S.D.'s 9 and 10 participated in the project. Schools and teachers were recommended by their district superintendents and principals.

The objective for 1984-85 was to improve teachers' science instruction skills as measured by their pre- and posttest scores on a project-developed test of scientific knowledge. The project received $12 thousand in funding from the New York State Legislature.

EVALUATION METHODOLOGY

Project impact was assessed by an analysis of teachers' scores on a project-developed test of scientific knowledge given as a pre- and posttest in October and June (see Appendix A). The test included multiple-choice items, identifications, matching columns, and short essays. The posttest included a third part related to the specific topics covered during the training sessions and field trips. Teachers who studied different topics were required to take one of the sections covering these areas.

FINDINGS

Pre- and posttest data were available for 19 of the 28 teachers. Their mean pretest score was 62 percent correct, and their mean posttest score was 71 percent correct, for a gain of nine percentage points (see Table 1). Thus, the project achieved its goal of improving teacher performance on the project-developed test.

CONCLUSIONS AND RECOMMENDATIONS

Although the Wave Hill Urban Environmental Program did achieve its goal for 1984-85, this finding should be interpreted with some caution. First, teachers' pretest scores were very high (62 percent correct), and the average gain of nine percent does not represent a significant level of improvement.

Second, it appears that the pretest and posttest forms were not similar since the posttest assessed specific areas that the teachers had studies during the program. There is some question,

TABLE 1

Teachers' Mean Percent Scores on the
Program-Developed Test,
Wave Hill Urban Environmental Program, 1984-85

	N	Mean Percent Score	Gain
Pretest	18	69%	9%
Posttest		71%	

- Participants achieved a gain of nine percent.

therefore, whether the pre- and posttest scores can be meaningfully compared.

To deal with these issues and truly assess the impact of the program, project staff could change the test, eliminating items most teachers know at pretest. Pre- and posttest forms of the test should be the same, including specific material covered in the project activities. In addition, a quantifiable measure of improvement should be included in the project objective (for example, 80 percent of the participants will gain at least 25 percent from pretest to posttest).

When the well's dry,
we know the worth of water. -- Benjamin Franklin

1. The average American drinks _____ quarts of water each day.
2. We use _____ gallons of water for each 5 minute shower.
3. Each time you flush the toilet, you contribute _____ gallons to your local sewage plant.
4. We each account for _____ gallons of sewage each day.
5. NYC has _____ operating sewage treatment plants, _____ under construction, and _____ % of its sewage now treated.
6. NYC's drinking water is imported via aqueducts from over _____ miles away.
7. NYC has _____ miles of shoreline, _____ miles of piers and bulkheads, and _____ miles of developed beaches.
8. A wastewater treatment plant in NYC can cost as much as _____ and treat as much as _____ gallons per day.
9. NYC treats _____ gallons of wastewater each day, enough to fill the new Yankee Stadium _____ times.
10. There are _____ miles of streams in the U.S.
11. There are _____ municipal water supply systems in the country.
12. U.S. EPA pays _____ % of the total cost of a swage treatment system.
13. U.S. EPA is in the process of spending over _____ dollars to clean up our nation's wastewater.

A. 80
B. 3,000,000
C. 1.5 - 5
D. 578
E. 75
F. 320
G. 200,000,000
H. 7
I. 18,000,000,000
J. 3
K. 100
L. 4 - 7
M. 17
N. 1,400,000,000
O. 15 - 20
P. 22,000
Q. 14
R. 125
S. 70,000,000

afterthought: Why are manhole covers round?

BG Pfortner
NYC 6/8/80

WAVE HILL - DISTRICT 79
UMBRELLA PROGRAM

SAMPLE

PRE-TEST
53424

TEACHER INSTITUTE

Wave Hill
Department of Education

Pre-Quiz

1. What plant do monarch caterpillars feed on?
2. What is potable water?
3. How many years do dandelion plants live (if not eliminated by unnatural causes.)
4. What are the four elements that are found in all proteins?
5. What is the northernmost point at which the sun's rays strike the earth directly on the first day of summer?
6. What is an annual (botanically speaking?)
7. What are the two basic components of soil?
8. What is a monoecious plant?
9. How were Indian canoes in this part of the country made?
10. Define Chlorophyll.
11. BONUS - When many Eastern Amerindians spoke of the 3 sisters, what did they mean?
12. Define Melanin
13. What are the 3 types of rocks?
14. How many centimeters long is this page? How many inches wide?
15. Name a dioecious tree.

NAME: _____ DATE: _____

WAVE HILL - DISTRICT #9
UMBRELLA PROGRAM

POST-TEST
53424

PRACTICUM QUIZ

1. Of the ten (10) plants displayed which one is important in the Monarch caterpillars life cycle?
2.
3. How many years do dandelion plants live (if not eliminated by unnatural causes)?
4. Find 5 (five) examples of monoecious plants from the grouping provided.
5. Give three characteristics of an insect.
6. Name an insect with no metamorphosis.
7. Find and collect leaves from four trees with opposite arragements and four with alternate arrangements and key out their genus and species.
8. What is the northern most point at which the sun's rays strike the earth directly on the first day of summer?
9. What are the two basic components of soil?
10. Define Chlorophyll.
11. New York City has how many operating sewage treatment plants in operation today?
12. The average American drinks how many quarts of water each day?
13. How were Indian canoes in the eastern part of the country made?
14. When many Eastern Amerindians spoke of the 3 sisters, what did they mean?
15. Define Melanin
16. What are the 3 types of rocks?
17. Choose from the rock samples the three major bedrocks of New York City
18. What is the dominant rock of the Bronx? How was it formed and name one mineral that is visible in this rock.
19. Name the smallest flowering plant and one parasitic flowering plant.
20. List three factors that contribute to the environmental quality of a fresh water pond.
21. BONUS How many centimeters long is this page? how many inches wide?

#5001-48-53425

REFOCUSING ATTITUDINAL PERSPECTIVES (RAP), 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Burt Schuman

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Refocusing Attitudinal Perspectives (RAP) Program provided teachers and students in Community School District (C.S.D.) 27 with training to deal with school conflicts caused by racial, religious, and ethnic differences. The program's goal was to improve knowledge of ethnic, racial, and religious differences and to prepare teachers to conduct training sessions with students and other faculty members.

Seventeen teachers and 138 students in grades eight, nine, eleven, and twelve from selected schools in C.S.D. 27, attended school-based dialogue training workshops, conducted by facilitators from the Panel of Americans, a private organization with expertise in human relations, and ethnic awareness training. In addition to consultants, the Panel of Americans also supplied printed instructional materials and films. The New York State Legislature contributed $45 thousand to support these activities.

EVALUATION METHODOLOGY

Evaluation activities focused on teacher and student responses to two program-developed surveys: one for teachers (see

Appendix A) and one for students (see Appendix B). The teacher survey had eight items and the student survey had ten items. These items included a four-point rating scale for responses; this allowed for a weighted mean yielding each sample's mean rating of the program (four high, one low). These surveys were administered at the end of the program.

The project's stated objective was that 80 percent of the participants would demonstrate that they had "significantly improved their knowledge in the areas of race, religion, and ethnicity, as measured by the aforementioned surveys". In addition, it was expected that teachers would report improved ability to conduct training sessions for students in these areas.

FINDINGS

Both teacher and student surveys employed four-point scales for responses to questions about perceived facilitators' impact of the program; a rating of four was the most positive and a rating of 1 was the least positive. Teachers' mean rating was 3.6. Sixty-five percent (eleven) of the teachers gave the most positive rating on 75 percent or more of the items (i.e., six or more items, out of eight total). Students' mean rating was 2.8. Twenty-two percent (31) of the students gave the most positive rating on 50 percent or more of the items (i.e., five or more items).

CONCLUSIONS AND RECOMMENDATIONS

Program objectives were stated in terms of improved knowledge, but the surveys measured satisfaction with participation in the program and self-reports of knowledge and ability. Given the difficulty of measuring attitudinal change, surveys such as those currently used may be an adequate index of program effectiveness, but objectives would then need to be restated.

Based on available data, it may be concluded that teachers had a more positive experience with the training than did students. Students responded to less than one-third of the items with the most positive response. These student responses may also indicate the need to focus on improving racial and ethnic understanding, but do not provide any evidence for the utility of student participation in this program.

A more adequate assessment of the program would include pre- and posttest comparisons. (e.g., of teacher feelings about conducting a workshop) to allow for assessment of program effects. With just posttest results reported, program effects are confounded with prior feelings of knowledgeability (or prior attitudes and knowledge, if those had been measured).

However, a log of teacher-run workshops would be the most meaningful index of the program's impact. It is recommended that if the student component of the program is continued, pre- and post-program administration of a pertinent standardized attitudinal scale would be preferable to the current survey, which focuses upon perceived utility of the program.

PANEL OF AMERICANS, INC.
RAP SURVEY 1984 - 1985

APPENDIX A
53425

Teacher Evaluation Form

Name ___ _____ - _____

School ___ _____ Position _____

1. Would you say that you have gained new insight into how to work with students of different racial and ethnic backgrounds?

   Considerably ___ Moderately ___ Slightly ___ No ___

2. Is the program helpful in offering classroom strategies that enhance your student's appreciation of ethnic diversity?

   Considerably ___ Moderately ___ Slightly ___ No ___

3. Can you see the program being helpful in improving human relations in the classroom?

   Considerably ___ Moderately ___ Slightly ___ No ___

4. As a result of the training, do you as a teacher view this notion of "difference" as a legitimate area for classroom exploration?

   Considerably ___ Moderately ___ Slightly ___ No ___

5. Do you feel that other teachers could benefit from these workshops?

   Considerably ___ Moderately ___ Slightly ___ No ___

6. As a result of this training would you feel comfortable in the role of moderator?

   Considerably ___ Moderately ___ Slightly ___ No ___

7. As a result of this training would you feel comfortable conducting a new training cycle?

   Considerably ___ Moderately ___ Slightly ___ No ___

8. Do you feel that these workshops would be beneficial for other teachers?

   Considerably ___ Moderately ___ Slightly ___ No ___

If you have any comments you would like to make regarding the RAP program please feel free to do so below:

NAME: _____ SCHOOL: _____

GRADE: _____ DATE: _____

PANEL OF AMERICANS, INC.

Student Evaluation Form

Evaluation Form for Participants in Training Cycles

1. Participation in the sessions made me more aware of my strengths as a leader and communicator -

   Never ___ Rarely ___ Often ___ Very Frequently ___

2. During the sessions, I felt I could share my thoughts and feelings more comfortably with others -

   Never ___ Rarely ___ Often ___ Very Frequently ___

3. Participating in these sessions enabled me to better understand my own feelings and values -

   Never ___ Rarely ___ Often ___ Very Frequently ___

4. These sessions have helped me to better appreciate the values, tastes, opinions and lifestyles of others -

   Never ___ Rarely ___ Often ___ Very Frequently ___

5. These sessions enabled me to better understand and appreciate people of different backgrounds -

   Never ___ Rarely ___ Often ___ Very Frequently ___

6. I learned about the history, culture and traditions of otherracial, ethnic or religious groups -

   Never ___ Rarely ___Often ___ Very Frequently ___

7. The sessions made me aware of the prejudices and stereotypes which create barriers between groups -

   Never ___ Rarely ___ Often ___ Very Frequently ___

8. As a result of participation in these sessions, I better understand the experience of other groups with prejudice -

   Never ___ Rarely ___ Often ___ Very Frequently ___

9. My participation has enabled me to relate more honestly and comfortably with people of different backgrounds -

   Never ___ Rarely ___ Often ___ Very Frequently ___

10. The training sessions have increased my understanding and appreciation of my own ethnic, racial or religious heritage -

    Never ___ Rarely ___ Often ___ Very Frequently ___

#5001-48-53426

BASIC SKILLS AFTER-SCHOOL PROGRAM, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Heywood Feierstein

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Basic Skills After-School Program provides instructional activities for sixth-grade students at P.S. 398 in District 17, and for neighborhood pre-school children. The component for sixth graders is a social studies enrichment program which includes 24 weekly trips to the Brooklyn Museum from 3:10 p.m. to 5:30 p.m. Museum artifacts are used to help students develop their language, research, and art skills. One sixth-grade tax-levy teacher and museum personnel staffed this component.

Neighborhood children were selected for the pre-school component based on a needs assessment which included such factors as family eligibility for free lunch, the school's knowledge of the family's needs, and recommendations from school and community agencies. The pre-school curriculum emphasized the development of social, motor, and language skills. Classes were held from 3:10 p.m. to 5:30 p.m., three afternoons a week, in kindergarten classrooms at P.S. 398. Two part-time teachers staffed this component. The New York State Legislature provided $20 thousand to fund the program.

EVALUATION METHODOLOGY

Evaluation activities focused on analysis of participants' pre- and posttest performance. There was a test for each component: a 20-item test was developed by project staff for the social studies component (see Appendix A), and pre-schoolers were administered the Boehm Test of Basic Concepts, a standardized test to measure a child's understanding of 50 basic language concepts.

The quantitative performance objective for sixth graders was that 75 percent of them would demonstrate mastery of 75 percent of the test items on the posttest. The quantitative objective for pre-schoolers was that 85 percent of them would achieve a 50 percent increase in their posttest scores.

FINDINGS

Pre-school component.

Pre- and posttest scores on the Boehm Test of Basic Concepts were submitted for 25 pre-schoolers. Mean pre- and posttest scores are reported in Table 1. The mean gain in scores was 19 percent. Only seven students (28 percent of the total) achieved the criterion set by the project, a 50 percent test score gain from pre- to posttest (see Table 2); thus this program objective was not met.

Sixth-grade Component

Pre- and posttest scores on the program developed test were submitted for 160 sixth-grade students in the social studies

TABLE 1

Pre-school Children's Mean Scores
on the Boehm Test of Basic Concepts
Basic Skills After-School Program, 1984-85

	Pretest		Posttest		
N	Mean Raw Score[a]	Percent Correct	Mean Raw Score[a]	Percent Correct	Percent Gain
25	20	40%	30	59%	19%

[a] Raw scores could range from zero to 50.

- The range of raw scores on the pretest was ten to 39; the range on the posttest was 15 to 42.

TABLE 2

Pre-schoolers' Achievement of Stated Program Goal[a]
for Improvement on Pre- to Posttest Performance on the
Boehm Test of Basic Concepts
Basic Skills After-School Program, 1984-85

Total Number of Children Receiving both Pre- and Posttests	Number of Children Achieving a 50% Gain from Pre- to Posttest Scores	Percentage Achieving Program Goal of 50% Improvement
25	7	28%

[a] Stated program goal: 85 percent of participants would achieve a 50 percent increase from pre- to posttest scores.

enrichment component of the program. Mean pre- and posttest scores are reported in Table 3. The mean post-test score was 60 percent correct. Only 28 students, (18 percent) achieved a 75 percent mastery level on the posttest (see Table 4). The project's objective established a criterion of 75 percent of the participants to reach the 75 percent mastery level; thus this project objective was not met.

CONCLUSIONS AND RECOMMENDATIONS

Although there were pre- to posttest gains for both the pre-school and sixth-grade components, the objectives set by the program were not achieved. Both student performance and the performance objectives should be redefined.

Pre-school performance objectives were stated in terms of percent improvement by individuals. A percent-gain criterion is warranted given the range in performance of incoming participants. However, the 50 percent increase criterion may be too stringent; for example, two participants scored above 33 points, making it numerically impossible to score a 50 percent increase on a 50 point test. Consideration should be given to changing criteria to an increase of a particular number of points or to state it in terms of percent of participants achieving a set mastery level.

The criterion for sixth-grade students was set as 75 percent of participants achieving a 75 percent mastery-level on the exam. This objective may have been too ambitious, but even a substantially more modest goal would not have been met (say 50 or

TABLE 3

Sixth-grade Students' Mean Scores on a Project-Developed Test of Social Studies and Museum Knowledge Basic Skills After-School Program, 1984-85

	Pretest		Posttest		
N	Mean Raw Score[a]	Percent Correct	Mean Raw Score[a]	Percent Correct	Percent Gain
160	7	35%	12	60%	25%

[a] Raw scores could range from zero to 20.

- The range of scores on the pretest was from one to 19; the range on the posttest was from five to 20.

TABLE 4

[a]
Sixth graders' Achievement on the Staff-Developed Test of Social Studies and Museum Knowledge
Basic Skills After-School Program, 1984-85

Total Number of Students Receiving both Pre- and Posttests	Number of Students Demonstrating Mastery of 75% of the Test Items on the Posttest	Percentage Achieving Program Goal of 75% Mastery
160	28	18%

[a] Stated program goal: 75 percent of participants would achieve 75 percent mastery on the posttest.

- The number of students who achieved 75 percent mastery on the posttest (a score of 15 or more) was six. One of these students scored less than 75 percent on the posttest.

even 25 percent of participants achieving a 75 percent mastery level). Of course, the criterion could be arbitrarily set at a level which was achieved this year (e.g., a more modest percentage set as the mastery-level), but this would serve actuarial purposes rather than educational purposes.

It is suggested that the program direct efforts toward being more effective in achieving its educational objectives and consult with the Office of Educational Assessment about revision of measurement of these efforts. Revised assessment procedures must acknowledge that the program may have effects which generalize beyond the particular subject matter - e.g., modes of inquiry or motivational-curiosity/awakening interests. Furthermore, statistical compilations of scores must acknowledge both the great variability within the sample and linear regression effects in pre- to posttest comparisons.

Approved by Office of Evaluation

Carol Jarvis
Room 775

APPENDIX A
53426

BOARD OF EDUCATION OF THE CITY OF NEW YORK

P.S. 396	Brooklyn	11212	60 East 94 Street	774-4466
SCHOOL	BOROUGH	ZIP CODE	ADDRESS	TELEPHONE

OFFICE OF THE PRINCIPAL

Name:

Date:

Class:

SOCIAL STUDIES/MUSEUM QUESTIONAIRE

Read all directions and questions CAREFULLY.

For questions 1-6 darken the circle that gives the right answer.

T = true F = false DK = don't know

1. Museum exhibits are always set up in a random way.
   T ( ) F ( ) DK ( )

2. Our Declaration of Independence was written before the Age of Egyptian pharoahs
   T ( ) F ( ) DK ( )

3. Our forefathers were the first group of people to practice democracy.
   T ( ) F ( ) DK ( )

4. Modern day scientists never apply knowledge obtained from past civilizations.
   T ( ) F ( ) DK ( )

5. In ancient times you could tell a person's class by the amount of jewelry he/she wore.
   T ( ) F ( ) DK ( )

6. The ancient Egyptian diet consisted of the same foods as ours is today.
   T ( ) F ( ) DK ( )

For questions 7-12 darken the circle that gives the right answer.

7. A museum obtains artifacts from

A ( ) gifts and donations
B ( ) purchases
C ( ) excavations
D ( ) all of the above

8. Our alphabet is most closely related to the alphabet of the

A ( ) Greeks
B ( ) Egyptians
C ( ) Native Americans
D ( ) Chinese

9. The most obvious thing you could learn about a culture from an examination of its pots and pans is

A ( ) their forms of government
B ( ) their forms of transportation
C ( ) the materials available to the people
D ( ) their forms of energy

10. Which one of the following people would you find working in a museum?

A ( ) carpenter
B ( ) scientist
C ( ) guard
D ( ) all of the above

11. African masks were used

A ( ) for ceremonies
B ( ) to scare people
C ( ) to decorate houses
D ( ) to contact the dead

12. Which one of the following objects would be more likely to be found in better condition in 2000 years?

A ( ) a glass bowl
B ( ) a hammerhead
C ( ) an apple core
D ( ) a football shirt

SOCIAL STUDIES/MUSEUM QUESTIONAIRE

For questions 13-20 BE SPECIFIC.

13. What kinds of things could you learn about a culture by looking at its statues?

14. Name 3 ways that a zoo can be like a museum.

1.

2.

3.

15. Why are some museum objects enclosed in glass?

16. What is the primary role of an archeologist?

17. What is the primary role of an anthropologist?

SOCIAL STUDIES/MUSEUM QUESTIONAIRE

Remember - for questions 13-20 BE SPECIFIC!

18. What is the primary role of a musem curator?

_____

_____

_____

_____

19. Why is it important to know about past civilizations?

_____

_____

_____

_____

20. Name one type of museum.

_____

#5001-48-53428

GODDARD-RIVERSIDE ENVIRONMENTAL EDUCATION PROGRAM, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Bernard Wohl

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Goddard-Riverside Environmental Education Program provides instruction in environmental science and experiences in the natural and urban environment to fourth- to sixth-grade pupils in Community School Districts (C.S.D.'s) 3 and 6. Sixteen groups of students with their teachers spent one week each at the Goddard Riverside Field Campus in Rifton, New York. Students received an additional 90 minutes of instruction once a week for ten to 13 weeks, focusing on classroom projects and community field trips.

In 1984-85, 450 pupils in 19 elementary schools took part in the project: 43 fourth graders, 224 fifth graders, and 183 sixth graders. Teachers selected for the project were those interested in environmental science, willing to attend special orientation and training workshops, and able to spend a week at the Field Campus with their students. Project activities focused on the life support systems essential to the total environment; classroom instruction was supplemented by visits to cultural centers in the urban environment.

The goal of the program was to promote awareness of and concern for environmental issues. The specific objective for 1984-85 was for participants to increase their knowledge of scientific concepts, as measured by their pre- and posttest scores on a program-developed test.

The program was staffed by a Director of Environmental Education, one full-time and two part-time environmental counselors, and three camp maintenance and support personnel. It received $57 thousand in funding from the New York State Legislature.

EVALUATION METHODOLOGY

Project impact was assessed by an analysis of students' scores on a program-developed test of science concepts (see Appendix A). The test was administered on a pre- and posttest basis at the beginning and end of the project. Perfect raw score on the test was 43.

FINDINGS

Pre- and posttest scores were reported for 446 pupils (see Table 1). The mean pretest score was 22 (51 percent correct) and the mean posttest score was 30 (69 percent correct), for a mean gain of eight points or 18 percent. Pretest scores differed widely, from 31 to 66 percent correct, although the differences were not related to grade level. Posttest scores were somewhat less divergent, ranging from 62 to 81 percent correct.

TABLE 1

Students' Mean Scores [a] on a Program-Developed Test, by Schools and Grades
Goddard-Riverside Environmental Education Program, 1984-85

			Pretest		Posttest		
School	Grade	N	Raw Score	%Correct	Raw Score	%Correct	%Gain
PS 75	4	14	18	41%	29	66%	25%
PS 166	4	29	24	56	31	73	17
PS 9	5	12	14	31	27	62	31
PS 75	5	9	23	52	31	73	21
PS 76	5	36	20	46	27	62	16
PS 84	5	24	24	56	30	69	13
PS 132	5	27	23	52	29	66	14
PS 145	5	14	22	51	30	69	18
PS 163	5	15	27	62	33	76	14
PS 166	5	24	22	51	28	64	13
PS 207	5	31	25	58	31	73	15
PS 208	5	32	19	44	28	64	21
PS 9	6	16	16	37	24	56	19
PS 84	6	31	27	62	34	78	16
PS 144	6	33	19	44	27	62	18
PS 163	6	18	29	66	33	76	10
PS 145	6	18	22	51	31	73	22
PS 75	6	6	27	62	35	81	19
PS 189	6	27	24	56	31	73	17
PS 192	6	30	19	44	32	74	30
TOTAL		446	22	51	30	69	18

[a] Perfect Raw Score = 43

- Students in all grades made mean gains from pretest to posttest.
- Mean pretest scores varied considerably, from 31 to 66 percent correct.
- Mean pretest scores varied from 62 to 81 percent correct.

CONCLUSIONS AND RECOMMENDATIONS

Analysis of student scores on the project-developed test revealed that the program met its objective of increasing students' knowledge of scientific concepts. In the future, however, project administrators should set a quantifiable measure of project impact (for example, that 80 percent of the participants will increase their scores at least 15 percent from pretest to posttest on a project-developed test of scientific knowledge).

GODDARD-RIVERSIDE
ENVIRONMENTAL EDUCATION PROGRAM
5001-48-23428

SCHOOL _____
STUDENT'S NAME _____
TEACHER'S NAME _____
DATE _____

KNOWLEDGE AND CONCEPTS OF SCIENCE

Put an X next to the correct answer of the following:

1. In the winter the <u>temperature</u> at the bottom of the lake is

   _____a. same as the surface
   _____b. colder than the surface
   _____c. warmer than the surface
   _____d. below freezing

2. The <u>bark</u> of a tree is most like

   _____a. a stomach
   _____b. a brain
   _____c. skin
   _____d. bones

3. Most green plants take water through their

   _____a. buds
   _____b. roots
   _____c. flower
   _____d. stem

4. If robins did not fly south before winter most of them would die because they could not get enough

   _____a. things to build nests with
   _____b. water
   _____c. sunshine
   _____d. food

5. Birds <u>help</u> us because they

   _____a. fight with squirrels
   _____b. eat insects that destroy crops
   _____c. store nuts for winter
   _____d. make nests in trees

6. A <u>habitat</u> is

   _____a. a type of rabbit
   _____b. the study of the habits of animals
   _____c. a place where plants and animals naturally live and grow
   _____d. something an animal eats

7. <u>Conservation</u> is best described as

   _____a. building of homes in natural surroundings
   _____b. saving money to buy parks and forests
   _____c. survival of the fittest

Knowledge and Concepts Student's Name_____

8. Without green plants we would die because plants provide us with.

_____a. a major source of building materials
_____b. a major source of oxygen and food
_____c. a major source of shade

9. One can tell how old a tree was when it was cut down by looking at

_____a. its roots
_____b. the width
_____c. its rings
_____d. the thickness of bark

I0. If a puddle in the schoolyard is frozen the temperature is closest to

_____a. 75° F.
_____b. 60°
_____c. 45°
_____d. 30°

II. Wood is used by man in many ways. Which four of the following can be made of wood.

_____a. furniture
_____b. cement
_____c. brick
_____d. fuel
_____e. house
_____f. glass
_____g. paper

I2. Some mammals hibernate (sleep through) the winter because

_____a. the cold would kill them
_____b. they cannot find enough food in the winter
_____c. they need a rest

I3. The energy crisis has come about because

_____a. we have been conserving wisely
_____b. we have developed other renewable forms of energy
_____c. we have thought carefully about the future
_____d. we have been using up our fossil fuels

I4 . Food energy is supplied to the eco-system by the activities in the leaves of green plants. This process is called

_____a. photosynthesis
_____b. erosion
_____c. respiration
_____d. evaporation

BEST COPY AVAILABLE

Knowledge and Concepts Student's Name_____

I5. All living things (except plants) take oxygen out of the environment and put _____ back into the air

_____a. carbon monoxide
_____b. nitrogen
_____c. carbon dioxide
_____d. oxygen

I6. Which of the following can be considered part of our environment:

_____a. air
_____b. water
_____c. soil
_____d. cars
_____e. all of the above

I7. Food energy is produced by

_____a. running water
_____b. walking
_____c. gasoline
_____d. green plants

I8. One of the side effects of man's technology is

_____a. modern conveniences
_____b. industrial waster
_____c. pollution
_____d. all of the above
_____e. none of the above

I9. Gas and oil are fuel to make cars run. What is the fuel that keeps our body going?

_____a. food
_____b. clothes
_____c. cars
_____d. houses

20. Homeostasis is

_____a. a balance
_____b. a kind of "give and take" with the chemicals in the body
_____c. going on all the time inside of you
_____d. all of the above

Knowledge and Concepts Students Name:_____

21. People have different skin colors because

_____a. they have to look differently
_____b. they talk differently
_____c. they have different amounts of skin pigment (melanin)
_____d. some are older than others

22. Eskimos are short and round while Dinkas (an African tribe) are tall and skinny because

_____a. Eskimos eat too much
_____b. each group has best adapted to its environment
_____c. Dinkas do special stretching exercises
_____d. none of the above

23. Soil erosion is bad for us because
_____a. it makes us dirty
_____b. it causes earthquakes
_____c. it often takes good nutrients out of the earth
_____d. it is a cause of bad weahter for farmers

24. If a baby doesn't get enough of the right kinds of food to eat it might
_____a. die
_____b. not grow enough
_____c. never be able to think and live a full life like other people
_____d. all of the above

25. Heat islands are
_____a. some islands in the South Pacific where experiments are done
_____b. Hot spots in New York City
_____c. the hottest places in the world
_____d. masses of warm air settled over cities making cities hot places to be

26. Pollution can be caused by
_____a. cars and busses
_____b. factories
_____c. furnaces
_____d. all of the above

27. People are a part of their Environment. This means
_____a. you are a part of everything around you
_____b. you effect things around you and they effect you
_____c. you are responsible for what happens in the world
_____d. all of the above

Knowledge and Concepts Students Name_____

28. An Ecosystem is
_____a. a cycle involving living things
_____b. a political process
_____c. part of a dinosaurs body
_____d. part of a birds body

29. Being healthy is
_____a. eating right
_____b. being energetic and active
_____c. knowing you can do good things and doing them
_____d. feeling good
_____e. allof the above

30. Dinosaurs no longer exist because they could not
_____a. adapt to their Environment
_____b . find good housing
_____c. hide from their enemies
_____d. raise their young properly

31. An owl that eats a mouse that eats corn is an example of
_____a. survival of the fittest
_____b. a balanced diet
_____c. a food chain
_____d. Einstein's Theory of Relativity

#5001-48-53429

ETHNIC AWARENESS PROGRAM, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Howard Levine

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROJECT DESCRIPTION

The Ethnic Awareness Program in Community School District 9 offers students an after-school program in Afro-American and Hispanic-American history and culture. Project activities include field trips to community facilities, meetings with leaders of cultural organizations, and the staging of dramatic and musical performances based on ethnic themes.

In 1984-85, the program operated in four schools, C.E.S. 64, 70, and 90, and C.J.H.S. 117, serving 107 pupils in grades two through nine. Participation was based on student interest, and participants attended two-hour sessions three times a week for 26 weeks.

In 1984-85, the objective of the program was to increase students' knowledge of Afro-American and Hispanic-American history and culture; specifically, for 80 percent of the participants to improve their performance from pretest to posttest on a program-developed test of ethnic themes.

Program staff included four teachers and four paraprofessionals. The program received funding of $20 thousand from the New York State Legislature.

EVALUATION METHODOLOGY

Project impact was assessed by an analysis of pupils' scores on a 41-item test of ethnic awareness, consisting of multiple-choice items, matching columns, and identifications (see Appendix A). The test was given on a pre- and posttest basis at the beginning and end of project activities.

FINDINGS

Pre- and posttest scores were reported for 107 pupils (see Table 1). On the whole, pupils gained 16 points or 40 percent from pretest to posttest. All but three of the 107 participants increased their scores at posttest. In general, pupils who began with the lowest mean pretest scores made the greatest improvement. Students at C.J.H.S. 117 had the lowest mean pretest scores and made the greatest gains, achieving the highest mean score at posttest. On the whole, they were older than the other participants. C.E.S. 70 students were the youngest participants but made the second greatest improvement, ranking second at posttest. For C.E.S. 90, on the other hand, the mean score at posttest was below 50 percent.

CONCLUSIONS AND RECOMMENDATIONS

Analysis of student scores on the program-developed test showed that the Ethnic Awareness Program was successful in attaining its objective of improving students' scores from pretest to posttest. Because of the variation of achievement among the schools, however, it is recommended that project

TABLE 1

[a]
Student's Mean Scores on a Program-Developed Test, by School Ethnic Awareness Program, 1984-85

		Pretest		Posttest		
School	N	Raw Score	%Correct	Raw Score	%Correct	%Gain
C.E.S. 64 (Grades 5-6)	24	12	29%	23	56%	27%
C.E.S. 70 (Grades 2-5)	28	9	21	27	65	44
C.E.S. 90 (Grades 5-8)	27	11	26	20	49	23
C.JHS 117 (Grades 7-9)	28	6	14	35	85	71
TOTAL	107	10	24	26	64	40

[a] Perfect Raw Score = 41

- All students made mean gains on the program-developed test from pretest to posttest.
- Pupils beginning with the lowest mean scores at pre-test made the greatest gains.
- Student performance varied greatly from school to school.

administrators set a quantifiable measure of achievement at posttest (for example, that 80 percent of the participants achieve a posttest score of 65 percent or more).

ETHNIC AWARENESS
TEST

Multiple Choice: Circle the correct answer

Esample: What Civil Rights leader won the Nobel Peace Price?

a) Malcolm X
b) Marcus Garvey
c) Martin Luther King Jr.
d) Adam Clayton Powell Jr

1- The first humans inhabited...

a) Europe
b) Africa
c) South America
d) Asia

2- The inhabitants of Puerto Rico, encountered by Columbus were...

a) Taino
b) Carib
c) Incas
d) Mayas

3- Reggae music originated in...

a) Barbados
b) Jamaica
c) Trinidad
d) Grenada

4- The name of the Puerto Rican National Anthem...

a) Mi Viejo San Juan
b) La Borinquena
c) Preciosa
d) El Jibaro

5- The merengue is a popular dance of...

a) Cuba
b) Dominican Republic
c) Puerto Rico
d) Haiti

6- The ancient stoneheads that were built in the Gulf of Mexico reflected the friendship between the Pre-Columbian people and the...

a) Asians
b) Australians
c) Arabs
d) Africans

7- One of the first universities in the world was located at...

a) Timbuktu
b) Notre Dame
c) Oxford
d) Sorbonne

8- A Puerto Rican composer was...

a) Cervantes
b) Matos
c) Jose Marti
d) Rafael Hernandez

Ethnic Awareness Test
Page 2

9- The two countries that share the Island of Hispanola are...

a) Trinidad/Tobago
b) Cuba/Puerto Rico
c) Dominican Republic/Haiti
d) St. Thomas/St. John

10- Dances such as the rumba, limbo, and cake walk were influenced by...

a) Puerto Rico
b) Spain
c) Africa
d) Peru

11- An instrument developed in Africa and used in latin percussion ensembles is...

a) Conga
b) Piano
c) Guitar
d) Flute

12- What people were captured and forcibly brought to the new world?...

a) Europeans
b) Aztecs
c) Asians
d) Africans

13- The influential muslim leader who was the national spokesman for the Nation of Islam during the late 1950's was...

a) Luis Farrakham
b) Franz Fanon
c) Malcolm X
d) Muhammad Ali

14- A major supplier of tropical produce to the northeast is...

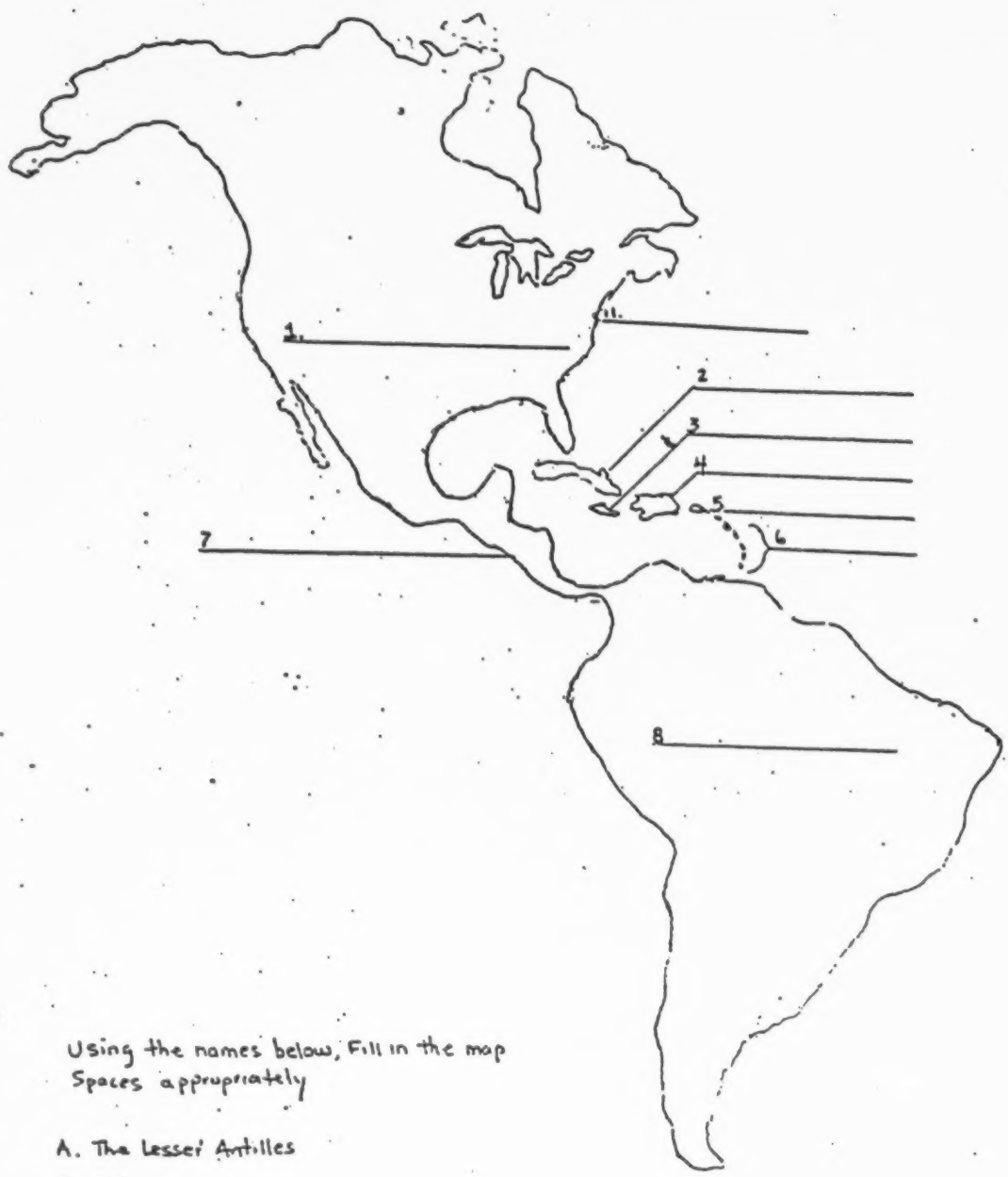
a) Dominican Republic
b) Cuba
c) Puerto Rico
d) Argentina

15- Combinations of African, European and Pre-Columbian cultures may be found in...

a) Capeoira
c) Africa
c) The Americas
d) All of the Above

-MATCHING-

1. Imhotep	A- Brazil
2. Black French Speaking American Country	B- Athlete, Opera Star, Author, Civil Rights Leade:
3. Langston Hughes	C- Founder Tuskegee Institute
4. Paul Robeson	D- Scientist
5. Pablo Picasso	E- West Indian Island
6. Trinidad	F- Politican, Lecturer, T.V. Host
7. Portuguese Speaking American Country	G- Engineer and Architect of first stone pyramid i Egy
8. George Washington Carver	H- Poet
9. Herman Badillo	I- Haiti
10. Booker T. Washington	J- Painter, Sculpter, Artist
11. Cesar Chavez	K- Brazilian Martial Arts/Dance
12. Roberto Clemente	L- Haitian Liberator
13. Tuscon L'Oveuerture	M- Blood/Plasma
14. Charles Drew	N- Famous Mexican Labor Leader
15. Capoeria	O- Humanitarian/Baseball player



Using the names below, Fill in the map Spaces appropriately

A. The Lesser Antilles
B. Africa
C. Puerto Rico
D. Cuba
E. Europe
F. South America
G. Central America
H. HAITI - DOMINICAN REPUBLIC
I. Jamaica
J. North America

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#5001-48-53435

PROJECT KEEP, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: Albert Kisseloff

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROGRAM DESCRIPTION

Project KEEP (Knowledge of the Environment and Ecology Preserves Us) is an environmental studies program designed to provide instruction to students at PS 155, Community School District 23. The program seeks to help children learn about the ecological environment in order to improve their understanding about the life around them. In 1984-85, 274 students, in grades two, four, and five participated in the program.

PROGRAM OBJECTIVE

The program objective was for 80 percent of the students to increase their knowledge of the positive and/or negative effects of the environment. Student performance was measured by a program-developed test.

POPULATION SERVED

Students in kindergarten through grade five at PS 155 were eligible for program participation. Selection criteria were based on the pupils' reading abilities, work habits, scholastic potential and special interests. Students were selected by the

school principal on the basis of teachers' recommendations.

PROGRAM ORGANIZATION AND FUNDING

Project staff consisted of one full-time teacher. The New York State Legislature contributed $35 thousand to cover his salary and to purchase computer data processing equipment and supplies.

Instructional activities took place in an ecology laboratory set up in one of the classrooms. Students visited the laboratory for forty-five minute classes, two or three times a week, for forty weeks. Using a problem-solving approach, students learned how to care for plants and animals through the construction of aquaria and terraria. Instruction in the use of micro-computers was a special feature of this program. Students learned to graph and to record data based on their observation of laboratory animals' growth and behavior. Other activities included research projects on pollution and on the development of new forms of energy.

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of student performance on a 20-item project-developed test (see Appendix A). The test was administered to students in October, 1984 and in June, 1985.

FINDINGS

Pretest and posttest raw scores were submitted for 274 students in grades two, four, and five. Table 1 shows an

TABLE 1

[a]
Students' Mean Scores on a Program-Developed Test, by Grade
Project KEEP, 1984-85

		Mean Scores				
		Pretest		Posttest		
Grade	N	Raw Score	Percent Correct	Raw Score	Percent Correct	Percent Gain
2	47	6	30%	16	80%	50%
4	106	9	45	16	80	35
4/5	36	9	45	16	80	35
5	85	9	45	17	85	40
TOTAL	274	8	41	16	81	40

[a] Perfect Raw Score = 20.

- Students in all grades achieved a mean posttest score of at least 80 percent.

PUBLIC SCHOOL 155
1355 HERKIMER STREET
BROOKLYN, NEW YORK 11233

Albert Kisseloff
Principal

Stella Harman-Gaynor
Assistant Principal

NAME _____ DATE _____

TEST FOR PROJECT KEEP

PRE/POST ASSESSMENT

Read each statement carefully. If it is true, circle T. If it is false, circle F. If you don't know whether it is true or false, circle DK.

1.	Ecology is the study of the living and nonliving things of the environment and how they are related.	T	F	DK
2.	Energy of the sun is part of every ecosystem.	T	F	DK
3.	Green plants are called producers.	T	F	DK
4.	Nutrients in an ecosystem can be used only once.	T	F	DK
5.	An example of interdependence is a farmer growing food for workers in the city and these workers building tractors for farmers.	T	F	DK
6.	Pollution caused by man can disturb the web of nature.	T	F	DK
7.	Man does not depend upon other animals in order to stay alive.	T	F	DK
8.	Secondary consumers are living things that eat plants only.	T	F	DK
9.	Ecosystems are too big to be damaged seriously.	T	F	DK
10.	The disappearance of one type of living thing from a pond would not affect other forms of life in the pond.	T	F	DK
11.	The very cold Arctic is not part of an ecosystem.	T	F	DK
12.	Man is both a primary consumer and a secondary consumer.	T	F	DK
13.	Water is found in every ecosystem except the desert.	T	F	DK
14.	An ecosystem includes all the living and nonliving things within a certain area.	T	F	DK
15.	If a nonliving part of an ecosystem is damaged, the living things in the ecosystem will not be affected.	T	F	DK
16.	Scientists use computers to help them with their work.	T	F	DK
17.	Computers can store or "remember" a great deal of information.	T	F	DK
18.	Computers can do anything.	T	F	DK
19.	Computers will solve all of man's problems.	T	F	DK
20.	BASIC is a computer language.	T	F	DK

#5001-48-53441

LEONX HILL - ENVIRONMENTAL EDUCATION PROGRAM, 1984-85

School-Community Education Program
Program Administrator: Jack Isaacs
Project Coordinator: David Stern

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROGRAM DESCRIPTION

The Lenox Hill Neighborhood Association and Community School Districts (C.S.D.s) 1 and 2 jointly conducted an environmental education program for elementary school students. The project's goal seeks to help students develop positive attitudes toward both the rural and urban environment. In 1984-85, 439 students, in grades four through six, at 17 schools in C.S.D. 2, participated in the program. Seventy-five of these pupils were also served by the English as a Second Language Program.

PROGRAM OBJECTIVE

The program objective specified that students demonstrate an improvement in their knowledge of environmental science, energy conservation and ecological concepts by scoring 70 percent or higher correct responses on the posttest.

POPULATION SERVED

Elementary school classes rather than individual students were selected for program participation. Classes were selected according to the following criteria: a) Classes with significant

members of economically-deprived students, who did not have the opportunity to visit rural communities; b) classes where some of the students were bussed-in from other neighborhoods in order to foster group cohesion and to overcome racial and cultural barriers; c) classes where teachers were willing to participate in the program which involved in-service training, trips in the city, and a five-day residence at a camp.

PROGRAM ORGANIZATION AND FUNDING

Project staff included a coordinator, an environmental education specialist, the camp director, an urban ecology counselor, and three camp staff employees. The Environmental Education Coordinator was responsible for the orientation sessions in the city and at camp for all participating teachers. The New York State Legislature contributed $55 thousand to support project activities.

Program instructional activities involved a five-day trip to the Lenox Hill Camp in Bantam, Connecticut, to study the rural environment. Supplementary classroom instruction on urban ecology examined the school neighborhood and the city. Students received a total of 35 hours of instruction by participating in both components of the program.

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of students pre- and posttest outcomes on a program-developed test (see Appendix A). The test, designed to measure knowledge of

environmental terms and concepts, consists of two equated forms of 33-items each. One of them was administered as a pretest and the other one as a posttest.

FINDINGS

Complete pre- and posttest data were submitted for all 439 students. Table 1 shows an overall mean pretest percentage score of 54 and an overall mean posttest score of 66 percent, with a gain of 12 percent. Seven classes or about 50 percent of the total population had mean posttest scores of at least 70 percent. These classes achieved a gain ranging from nine to 20 percent. Posttest scores for ten schools ranged from 48 to 69 percent. Although the classes with E.S.L. students showed lower posttest scores, ranging from 48 to 60 percent, two of these classes achieved mean gains of 12 percent.

CONCLUSIONS AND RECOMMENDATIONS

The analysis of test outcomes indicates that the program succeeded in achieving its objective as about half of the participating schools scored at least 70 percent on the posttest. Yet, measuring the impact of the program remains problematic because posttest outcomes alone are not a good measure of student growth. Instead, achievement gains are more adequate indicators of student performance. When these are taken into account, all classes achieved gains ranging from six to 20 percent. These gains indicate that the program had an impact on student awareness of environmental issues.

TABLE 1

Students' Mean Scores on a Program-Developed Test, by School[a]
Lenox Hill Urban Environmental Education Program, 1984-85

			Pretest		Posttest		
School	Grade	N	Raw Score	Percent Correct	Raw Score	Percent Correct	Percent Gain
PS 3	4-5	27	18	54%	24	72%	18%
PS 59	4	17	18	54	20	60	6
PS 190	4	19	16	48	21	63	15
PS 1	5b	22	13	39	16	48	9
PS 2	5b	23	16	48	20	60	12
PS 130	5b	30	15	45	19	57	12
PS 3	5	31	21	63	26	83	20
PS 11	5	45	18	54	23	69	15
PS 33	5	19	16	48	20	60	12
PS 40	5	44	20	60	24	72	12
PS 110	5	29	21	63	25	75	12
PS 111	5	20	19	57	24	72	15
PS 124	5	24	21	63	24	72	9
PS 158	5	41	21	63	25	75	12
PS 142	5/6	24	17	51	20	60	9
PS 42	5,6,7	5	16	48	19	57	9
PS 20	6	19	18	54	23	69	15
TOTAL		439	18	54	22	66	12

[a] Perfect Raw Score = 33.

[b] E.S.L. students.

- About 50 percent of the total population had a mean posttest score of at least 70 percent.

The following recommendation is made for future evaluation purposes:

- The program objective should specify a quantitative gain of at least 15 percent from pre- to posttest.

PRETEST -- DISTRICT 2 / LENOX HILL ENVIRONMENTAL EDUCATION RESIDENT PROGRAM

Please do not put any marks in the booklet.

1. All living things

   (a) crawl.

   (b) run.

   (c) fly.

   (d) grow.

2. The best way to make an image look clear when you are using a microscope is to

   (a) move the lens up and down.

   (b) move the mirror sideways.

   (c) move the slide.

   (d) move the mirror up and down.

3. An instrument which you would use to measure air pressure is

   (a) a thermometer.

   (b) a weather vane.

   (c) an anemometer.

   (d) a barometer.

4. A cross section is cut from the bottom of a living tree. The cross section has 40 annual rings. The age of the tree

   (a) is 40 years.

   (b) is less than forty years.

   (c) is much more than forty years.

   (d) cannot be determined.

PLEASE TURN TO NEXT PAGE.

5. Fog is most like

   (a) snow.

   (b) hail.

   (c) clouds.

   (d) rain.

6. One of these does not belong in a city habitat. It is the

   (a) dog.

   (b) pigeon.

   (c) duck.

   (d) girl.

7. The most important reason for conserving energy today is that

   (a) it saves money.

   (b) the supplies of oil and coal are limited.

   (c) it saves time.

   (d) there are too many cars.

8. The main producer in a fresh water pond is

   (a) fish.

   (b) turtle.

   (c) algae.

   (d) yeast.

9. A place in a city that looks most like a village green is

   (a) a school playground.

   (b) an empty lot.

   (c) a shopping center.

   (d) a park with grass and trees.

PLEASE TURN TO NEXT PAGE.

10. A plant gets energy for photosynthesis from

    (a) food.

    (b) sunlight.

    (c) chlorophyll.

    (d) oxygen.

11. The chief cause of air pollution in a city is

    (a) exhaust from cars.

    (b) burning leaves.

    (c) factories.

    (d) burning fuel in homes.

12. An example of a fossil fuel is

    (a) oil.

    (b) wood.

    (c) electricity.

    (d) water.

13. A fresh water aquarium is most like

    (a) a river.

    (b) an ocean.

    (c) a pond.

    (d) a bay.

14. A pond will become a swamp; a meadow will become a woodland. This is called

    (a) adaptation.

    (b) evolution.

    (c) succession.

    (d) water cycle.

PLEASE TURN TO NEXT PAGE.

15. An aquarium tank contains water, gravel, a green plant, a fish, and a snail. The water gets oxygen from the air and from the

(a) gravel.

(b) green plant.

(c) fish.

(d) snail.

16. Green plants are different from most other living things because they

(a) make their own food.

(b) grow rapidly.

(c) contain many kinds of cells.

(d) digest their own food.

17. An instrument which you would use to make something look bigger is a

(a) periscope.

(b) kaleidoscope.

(c) microscope.

(d) kinescope.

18. Most fungi, such as mushrooms and molds, get their food by

(a) absorbing water from the soil.

(b) capturing and eating insects.

(c) eating tiny animals in pond water.

(d) living on other plants and animals.

19. Game refuges and bird sanctuaries are set up in order to

(a) raise animals for hunting.

(b) give animals a safe place to live.

(c) keep harmful animals to themselves.

(d) fatten animals for sale.

PLEASE TURN TO NEXT PAGE.

20. The plant which would most likely grow in the woods is a

(a) cactus.

(b) fern.

(c) water lily.

(d) corn.

21. The person who is not polluting the environment is

(a) a woman driving a car.

(b) a man smoking a cigarette.

(c) a girl riding a bicycle.

(d) a boy dropping a candy wrapper on the ground.

22. Some plants cannot grow under the trees in a forest because there is too little

(a) water.

(b) soil.

(c) space.

(d) sunlight.

23. Water freezes at

(a) 100 degrees C.

(b) 32 degrees C.

(c) 212 degrees C.

(d) 0 degrees C.

24. The food of an owl is mostly

(a) seeds.

(b) insects.

(c) mice and other small animals.

(d) wild berries.

PLEASE TURN TO NEXT PAGE.

25. A microscope can make things look bigger because it has

(a) lenses.

(b) a mirror.

(c) a tube.

(d) clips.

26. Take a look at this food chain:

sun ⟶ grass ⟶ cow ⟶ person.

The producer in this food chain is

(a) grass.

(b) sun.

(c) cow.

(d) person.

27. When air pressure is high and there are only cumulus clouds, the weather will be

(a) stormy.

(b) fair.

(c) cold.

(d) hot.

28. An example of a natural resource that is constantly being reproduced is

(a) a tree.

(b) coal.

(c) oil.

(d) gold.

PLEASE TURN TO NEXT PAGE.

29. Many acorns are on the lawn. The tree which you would expect to find on or near the lawn is

(a) maple.

(b) elm.

(c) oak.

(d) pine.

30. Bees are

(a) not helpful to man because they sting.

(b) only good for making honey.

(c) not harmful or helpful to man.

(d) helpful because they make honey and help to cross pollinate flowers.

31. A living thing which can produce its <u>own</u> food is a

(a) pig.

(b) robin.

(c) tree.

(d) mushroom.

32. The color of some animals helps to protect them. This is called

(a) hibernation.

(b) migration.

(c) camouflage.

(d) none of these.

33. The most important reason for planting trees and grass on a bare hillside is to

(a) prevent erosion.

(b) prevent forest fires.

(c) provide food for wildlife.

(d) provide food for farm animals.

POST TEST -- DISTRICT 2 / LENOX HILL ENVIRONMENTAL EDUCATION RESIDENT PROGRAM

Please do not put any marks in this booklet.

1. A cross section is cut from the bottom of a living tree. The cross section has 40 annual rings. The age of the tree

   (a) is 40 years.

   (b) is less than forty years.

   (c) is much more than forty years.

   (d) cannot be determined.

2. A common weed that can be found growing on a lawn is a

   (a) rose.

   (b) pansy.

   (c) dandelion.

   (d) water lily.

3. Green plants are the most important parts of a pond food chain because they are

   (a) producers.

   (b) consumers.

   (c) decomposers.

   (d) parasites.

4. The part of a tree which helps protect it from insects that cause disease is the

   (a) root.

   (b) bark.

   (c) flower.

   (d) fruit.

5. When a frog is a tadpole it breathes with

   (a) lungs.

   (b) gills.

   (c) its head.

   (d) its fins.

PLEASE TURN TO NEXT PAGE.

6. The most important reason for planting trees and grass on a bare hillside is to

   (a) prevent erosion.

   (b) prevent forest fires.

   (c) provide food for wildlife.

   (d) provide food for farm animals.

7. Most fungi, such as mushrooms and molds, get their food by

   (a) absorbing water from the soil.

   (b) capturing and eating insects.

   (c) eating tiny animals in pond water.

   (d) living on other plants and animals.

8. A bird which is found in great numbers in the city is the

   (a) bluebird.

   (b) junco.

   (c) pigeon.

   (d) Baltimore oriole.

9. The part of a plant that usually has seeds in it is the

   (a) bud.

   (b) leaf.

   (c) stem.

   (d) fruit.

10. Wildlife refuges and bird sanctuaries are set up in order to

   (a) raise animals for hunting.

   (b) give animals a safe place to live.

   (c) keep harmful animals to themselves.

   (d) fatten animals for sale.

PLEASE TURN TO NEXT PAGE.

11. A bird that has a sharp curved beak and strong claws (like a hawk or an owl) probably feeds mostly on

(a) meat.

(b) acorns.

(c) wheat and corn.

(d) insects.

12. The environment of a paved schoolyard is most like that of a desert because

(a) it has cracks in the pavement.

(b) it is dry and has poor soil.

(c) very few plants grow in it.

(d) it is made of cement.

13. The part of the plant which holds it in the soil is the

(a) branch.

(b) leaf.

(c) root.

(d) trunk.

14. The plant which could grow best in a forest is

(a) cattail.

(b) moss.

(c) cactus.

(d) milkweed.

15. The animal which does not belong in a city street habitat is a

(a) dog.

(b) pigeon.

(c) duck.

(d) girl.

PLEASE TURN TO NEXT PAGE.

16. An animal which breathes with gills is a

(a) bird.

(b) snake.

(c) cat.

(d) fish.

17. An example of a fossil fuel is

(a) paper.

(b) wood.

(c) coal.

(d) water.

18. During the summer a squirrel lives in a nest which is

(a) on a branch of a tree.

(b) on the roots of the tree.

(c) on the ground.

(d) under the ground.

19. The part of a city street in which water flows to the sewer is called the

(a) curb.

(b) gutter.

(c) sidewalk.

(d) crown.

20. The green color in grass is called

(a) glucose.

(b) cytoplasm.

(c) chlorophyll.

(d) cellulose.

PLEASE TURN TO NEXT PAGE.

21. The most important reason for conserving energy today is that

(a) our supply of fossil fuels is limited.

(b) it saves time.

(c) fossil fuels are hard to find.

(d) there are too many cars and trucks.

22. If you want to look at a specimen under a microscope, you put it on a

(a) lens.

(b) slide.

(c) dropper.

(d) mirror.

23. The part of a tree which can make food is the

(a) branch.

(b) leaf.

(c) root.

(d) trunk.

24. A type of plant that helps break down a rotting log is

(a) fungus.

(b) cactus.

(c) dandelion.

(d) cattail.

25. An instrument used to measure air pressure is a

(a) weather vane.

(b) thermometer.

(c) barometer.

(d) anemometer.

PLEASE TURN TO NEXT PAGE.

26. The energy in oil, coal and electricity came from

(a) muscles.

(b) the moon.

(c) the sun.

(d) water.

27. Ecology is

(a) the study of fossils.

(b) the study of living things and their environment.

(c) the study of plants.

(d) the study of animals.

28. An example of a natural resource that is constantly being reproduced is

(a) a tree.

(b) coal.

(c) oil.

(d) gold.

29. A pond will become a swamp; a field will become a forest. This is called

(a) adaptation.

(b) evolution.

(c) succession.

(d) the water cycle.

30. The color of some animals helps to protect them. This is called

(a) hibernation.

(b) migration.

(c) camouflage.

(d) none of these.

PLEASE TURN TO NEXT PAGE.

31. After a heavy rain, the water at the edge of a lake may have a brown color. This is most likely due to

(a) reproduction of plants.

(b) soil being washed into the lake.

(c) animals in the water.

(d) rocks in the water.

32. Dandelion seeds are usually carried away from the plant by

(a) wind.

(b) water.

(c) man.

(d) none of these.

33. This is a kind of food chain:

sun ⟶ leaf ⟶ caterpillar ⟶ bird.

The <u>producer</u> in this food chain is the

(a) leaf.

(b) bird.

(c) caterpillar.

(d) none of these.

#5001-48-53447

ADVENTURES IN SCIENCE, 1984-85

Community Education Program
Program Coordinator: Jack Isaacs
Project Director: Frank Quinones

Prepared by:
Office of Educational Assessment
New York City Public Schools

PROGRAM DESCRIPTION

The Adventures in Science Project is designed to introduce basic principles on the marine environment to teachers and students in Community School District (C.S.D.) 8. The program seeks to develop a greater awareness among students on marine environmental issues. In addition, the purpose of the program is to assist teachers in the development of teaching science skills. In 1984-85, the program served 362 students in grades three through six at seven schools.

PROGRAM OBJECTIVE

The program objective anticipated that students would demonstrate an ecological and scientific knowledge of the marine environment, as measured by their performance on a program-developed test.

POPULATION SERVED

The project serves students in grades four through six at C.S.D. 8. Classes, rather than individual students, are chosen for program participation. The criteria for selecting these

classes is that teachers express an interest in the program and a desire to improve their science instructional skills. In 1984-85, ten school principals selected two classes in each one of their schools.

PROGRAM ORGANIZATION AND FUNDING

Project activities were conducted by the District Science Coordinator. Funds for staff and computers were provided by the district. The New York State Legislature contributed $12 thousand in additional funds for the purchase of educational supplies.

Participants were provided with an introduction to environmental science activities in four major areas: Maps and Navigation; Whales and their Environment; Ecosystems, and Using Computers in Science. Project instruction was offered during regular school hours for six to eight-week periods. Classes met for 40 to 60 minutes, two or three days a week.

EVALUATION METHODOLOGY

Evaluation activities focused on the analysis of student performance on a program-developed test (see Appendix A). This test measures students' ecological and scientific knowledge of the local marine environment. It was administered as both a pre- and posttest at the beginning and end of the program cycle. It was anticipated that students would show an increase in their scores between the pre- and the posttest.

FINDINGS

Due to a delay in the reception of educational supplies, (i.e. videotape and curricula material, and computer software), the project began later than anticipated. Consequently, some planned activities, such as field trips to local environmental facilities, had to be eliminated.

Raw pre- and posttest scores were submitted for 362 students in grades three to six, at seven schools in District 8. Table 1 shows test outcomes by grade. Overall mean pretest raw score was four (20 percent correct responses); mean posttest raw score was 14 (69 percent correct responses), for an overall mean gain of 40 percent. Pretest mean raw scores by grade ranged from two to six points; posttest mean raw scores ranged from ten to 18 points, and achievement gains ranged from 40 to 68 percent. The lowest posttest score was recorded by the only class including third-grade students. This class also achieved the lowest gain (40 percent).

CONCLUSIONS AND RECOMMENDATIONS

Students' test results indicate that all grades made significant gains on the program-developed test. Overall mean gain was 40 percent. These data indicate that the Adventures in Science Program was a successful project having a significant impact on the performance of participating students. However, the program was specifically designed for students in grades four and six but third graders also participated in it. The fact that the class including third grade students achieved the lowest percentage

TABLE 1

Students' Mean Raw and Percentage Scores[a] On a Program-Developed Test, Adventures in Science, 1985

School	Grade	N	Mean Scores				
			Pretest		Posttest		
			Raw Score	Percent Score	Raw Score	Percent Score	Percent Gain
PS 14	4/5	47	4	20%	17	86%	66%
PS 48	3/4	22	2	10	10	50	40
	4	19	3	15	11	56	41
PS 60	4	33	4	20	14	69	49
	4/5	23	4	20	18	88	68
PS 69	4	67	2	10	13	64	54
PS 72	5	46	6	30	17	86	56
PS 119	5	24	4	20	13	66	46
	5/6	28	3	15	14	69	54
PS 140	5	26	4	20	14	69	49
	6	27	4	20	15	76	56
TOTAL		362	4	20	14	69	49

[a] Perfect Test Score = 20

- Overall mean pretest score was four; mean posttest score was 14, and overall mean gain was 49 percent.

gain, indicates that the test might be too difficult for them. In addition, the program objective does not specify a quantitative gain participants are expected to achieve between the pre- and the posttest.

Based on the evaluation findings, the following recommendations are made:

- An effort should be made not to select students outside grades four through six.
- The program objective should establish a specific quantitative achievement gain. On the basis of the 1984-85 test outcomes, a 50 percent gain is recommended.

ADVENTURES IN SCIENCE
5001-48-53447
CITYWIDE UMBRELLA BUREAU
COMMUNITY SCHOOL DISTRICT 8

PRE- AND POST TEST
1984-85

ADVENTURES IN SCIENCE

The following test is a short quiz to find out how much you remember about the Adventures in Science Program. Your class might not have had all the material so don't be worried if you don't know all the answers. Put an (X) in the space next to the letter that you think is the correct answer for each question on your answer sheet. PLEASE DO NOT WRITE ON THIS PAPER AT ALL.

1. The energy in a food chain first comes from

   A. green plants
   B. animals
   C. oxygen
   D. the sun

2. The green coloring (or pigment) in plants is called

   A. chlorophyll
   B. carbon dioxide
   C. sugar
   D. chlorine

3. The very small, or microscopic, plants and animals that live in the ocean that become food for so many other animals are called

   A. algae
   B. larvae
   C. cordgrass
   D. plankton

4. Green plants use carbon dioxide and water to make

   A. nitrogen
   B. sugar
   C. hydrogen
   D. water vapor

5. In our area's salt water wetlands one of the major sources of food for animals is

   A. seaweed
   B. goldenron
   C. marsh elder
   D. cordgrass

6. Salt water wetlands are important natural resources because

A. for industry they are a valuable source of sand
B. for farming they are a valuable source of rich soil
C. fish use them as feeding and spawning grounds
D. the plants found there are made into low cost animal and plant foods

7. Tides are caused by

A. gravity from the moon
B. strong winds and storms
C. gravity from the sun
D. gravity from the moon and sun

8. To make a really large wave the wind needs to be

A. blowing very hard in a small, narrow space
B. slowed down by land, trees or mountains
C. blowing for only a short time
D. blowing for a long time through a large, wide open space

9. Cold water _____ hot water.

A. is lighter than
B. weighs the same as
C. is heavier than
D. is not as dense as

10. A wave begins to 'break' or fall over in shallow water because

A. the bottom of the wave touches the sand, slowing it down, while the top of the wave is still going fast
B. of gravity from the moon
C. the top of the wave begins to slow down
D. it begins to hit rocks and other objects in the water

11. The study of how the ocean's water moves is called

A. geological oceanography
B. chemical oceanography
C. physical oceanography
D. biological oceanography

12. What is the name of the warm ocean current that starts at the Equator and then flows northward, going right by New York, crossing the Atlantic Ocean to England, Ireland and Scotland ? It was first studied by Benjamin Franklin.

A. Japan Current
B. Gulf Stream
C. North Equatorial Current
D. Greenland Current

13. The iron found in seaweeds, and dark green vegetables, is used by our bodies to

A. build strong bones and teeth
B. maintain good eyesight
C. help our blood to hold onto oxygen
D. fight infection

14. When buying fresh fish you should be sure the fish has

A. soft flesh
B. brown gills
C. clear eyes
D. all of its fins

15. Which one of the following substances helps to build muscles ?

A. calcium
B. protein
C. fiber
D. iodine

16. Meat and other animal products, such as milk and eggs, supply us with a great deal of protein. They also contain cholesterol. Fish also supply us with protein but contain smaller amounts of cholester This can be important because our bodies

A. might build up the cholesterol in our arteries making it harder for our hearts to work
B. can become overweight with the extra cholesterol
C. need alot of cholesterol to take the energy out of our food
D. cannot properly digest cholesterol

17. Which one of the following words means to 'farm the sea' ?

A. cultivation
B. aquaculture
C. irrigation
D. agriculture

18. Which one of the following <u>couldn't</u> be a marine career ?

A. lawyer
B. all of the answers could be marine careers
C. plumber
D. steel worker

19. Opportunities for American fishermen should get better because

A. now foreign fishermen are not allowed to fish any closer than 200 miles from our shores without getting special permission
B. the government will pay them a salary even when they don't catch any fish
C. we now have newer and more powerful fishing boats
D. there are now less fishermen from other countries to compete with

20. Approximately how much of New York's straight line waterfront (220 miles) is not being used and which could be used to create jobs or recreational areas ?

A. 25%
B. 10%
C. 50%
D. 5%

ALTERNATE QUESTIONS

17A. Water may be found in three different forms (or states). They are

A. solid, vapor and steam
B. solid, liquid and gas
C. liquid, solid and ice
D. liquid, fog and steam

18A. When molecules at the surface of the water join together they form a film or skin that is strong enough to hold up a pin. This skin is called

A. the water cycle
B. the surface tension
C. the bonded tension
D. the molecular structure

19A. When a vapor, or gas, is being cooled so that it changes into a liquid, we say that it is

A. condensing
B. freezing
C. solidifying (changing into a solid)
D. expanding

20A. When molecules are heated they

A. spread apart
B. come together
C. remain the same
D. form bonds